

Claims :

1. A radiation detection device comprising a CsBr crystal as a scintillator and a photoelectron multiplier tube for receiving a light from the scintillator, wherein the photoelectron multiplier tube detects a light of a wavelength of from 300 to 500
5 nm, and has a sensitivity permitting the detection of a single-photon, a half bandwidth of 30 ps or less relative to the single-photon and a light-receiving area of 10 mm² or more.
2. The radiation detection device of claim 1, which is for detecting gamma rays.
- 10 3. The radiation detection device of claim 1 or 2 wherein the CsBr crystal has a CsCl type crystal structure and the Cs:Br atom ratio is about 1:1.
4. The radiation detection device of any one of claims 1 to 3 wherein the scintillator has an attenuation time of 50 ps or less.
- 15 5. The radiation detection device of any one of claims 1 to 4 wherein the photoelectron multiplier tube is a MCP built-in photoelectron multiplier tube.